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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/633,764

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27572 7590 02/04/2008  
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EXAMINER

MIGGINS, MICHAEL C

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

02/04/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/633,764	<b>Applicant(s)</b> CHANG ET AL.	
	<b>Examiner</b> Michael C. Miggins	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4-28 and 30-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-28 and 30-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### **REJECTIONS WITHDRAWN**

1. The 35 USC 112 2<sup>nd</sup> paragraph rejection claims 12 and 48-50 set forth in the non-final rejection of 7/2/07, pages 2-3, paragraphs 2-3 has been withdrawn. The 103(a) rejection of claims 1 and 4-27 over Watkins in view of Mueller set forth in the non-final rejection of 7/2/07, pages 3-4, paragraphs 5 has been withdrawn.

### **REJECTIONS REPEATED**

2. The 103(a) rejection of claims 28 and 30-54 over Bonk in view of Mueller set forth in the non-final rejection of 7/2/07, pages 4-6, paragraph 6 is repeated for the reasons of record. Applicant has amended the average thickness of each individual microlayer to 2.5 microns which is disclosed in Bonk (column 7, lines 19-30).

### **NEW REJECTIONS**

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 4-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonk et al. (US 6082025) in view of Mueller et al. (US 6403231).

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Bonk discloses articles, such as balls and shoes, made from laminate barrier membranes and permanently sealed inflatable bladders formed from them (column 1, lines 16-40). The articles have ethylene vinyl alcohol copolymer barrier layers (column 11, line 64 through column 12, line 23) bonded to thermoplastic polyurethane elastomer layers (column 7, lines 31-62) and the bladders are inflated with nitrogen (column 1, lines 4-13), said membrane includes alternating microlayers of thermoplastic polyurethane elastomer and EVOH copolymer barrier material, wherein the number of layers is from 10 to 1000 (column 7, lines 1-62, column 11, line 64 through column 12, line 23) and wherein the thickness of the individual layers is up to about 2.5 microns (column 7, lines 19-30).

Bonk fails to disclose a laminar nano-filler having an average particle platelet thickness of up to about 10 nanometer, an average aspect ratio of at least about 200, and at least one of height and width being independently from about 0.1 to about 1.5 wherein the nano-filler does not appreciably decrease the resilience of the membrane.

Mueller discloses a laminar montmorillonite nano-filler having an average particle platelet thickness of up to about 10 nanometer, an average aspect ratio of at least about 200 (column 3, lines 30-44 and column 5, lines 31-35, column 7, lines 15-21), and at least one of height and width being independently from about 0.1 to about 1.5 (column 3, lines 30-44) wherein the nano-filler does not appreciably decrease the resilience of the membrane (column 6, lines 41-54, since the films are flexible) in an EVOH barrier layer (column 4, lines 19-20, column 5, lines 3-4) for the purpose of providing improved gas barrier properties (column 3, lines 1-19).

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided a laminar nano-filler having an average particle platelet thickness of up to about 10 nanometer, an average aspect ratio of at least about 200, and at least one of height and width being independently from about 0.1 to about 1.5 wherein the nano-filler does not appreciably decrease the resilience of the membrane in the EVOH layer of Bonk in order to provide improved gas barrier properties as taught or suggested by Mueller.

#### **ANSWERS TO APPLICANT'S ARGUMENTS**

5. Applicant's arguments of 11/2/07 have been carefully considered but are deemed unpersuasive. Applicant's arguments with regard to the 112 rejection and the Watkins in view of Mueller 103 rejection are moot since the rejections have been withdrawn.

Applicant has argued unexpected results in that the microlayers tend align the small nano-filler platelet more generally parallel to the faces of the microlayer polymeric composite. Any assertion of unexpected results to overcome a 103 rejection must be made in declaration form. Moreover, the alleged unexpected results are not commensurate in scope with the claims since the claims do not recite that the platelets are substantially parallel to the faces of the microlayers.

Applicant has argued that the films of Mueller while flexible are not resilient. However, Bonk discloses resiliency (column 5, lines 10-17). Applicant has argued that films of Mueller are much thicker than those recited in the instant claims. However, Bonk discloses the recited thickness (column 7, lines 19-30).

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

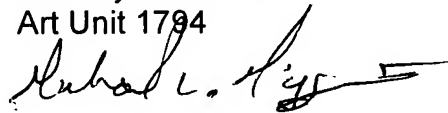
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Miggins whose telephone number is 571-272-1494. The examiner can normally be reached on 1:00-10:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael C. Miggins  
Primary Examiner  
Art Unit 1794



MCM  
January 31, 2008